

AMENDMENTS TO THE CLAIMS

1-8. (Canceled).

9. (Currently Amended) A polycrystalline silicon film on a buffer layer that is on a substrate, the polycrystalline film containing nickel metal of which density ranges 2×10^{17} to 5×10^{19} atoms/cm³, and an electrical conductivity activation energy between 0.52eV and 0.71eV, the polycrystalline silicon film comprising a plurality of needle-shaped silicon crystallites,

wherein the polycrystalline silicon film is formed by crystallizing an amorphous silicon film containing the nickel metal by a thermal treatment carried in a temperature of about 400 to about 500 °C and applying an electric field with metal electrodes, and

wherein the needle-shaped silicon crystallites are formed by movement of a silicide of the metal.

10. (Currently Amended) The polycrystalline silicon film according to claim 9, wherein the polycrystalline silicon film ~~the metal~~ includes one of ~~nickel (Ni)~~, gold (Au) and cobalt (Co) instead of nickel metal.

11. (Currently Amended) The polycrystalline silicon film according to claim 9, wherein the nickel metal works as a catalyst during the crystallization.

12-19. (Cancelled)